Nov. 7, 1950 J. KAILENTA 2,529,341

SPRAYER REGULATOR

Filed Dec. 12, 1946

FIG. 1.

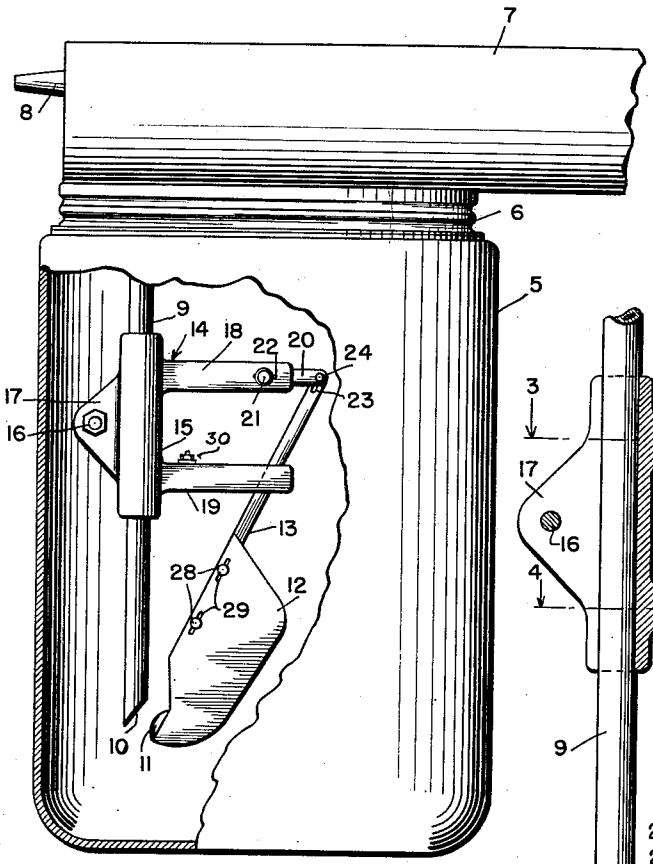


FIG. 2.

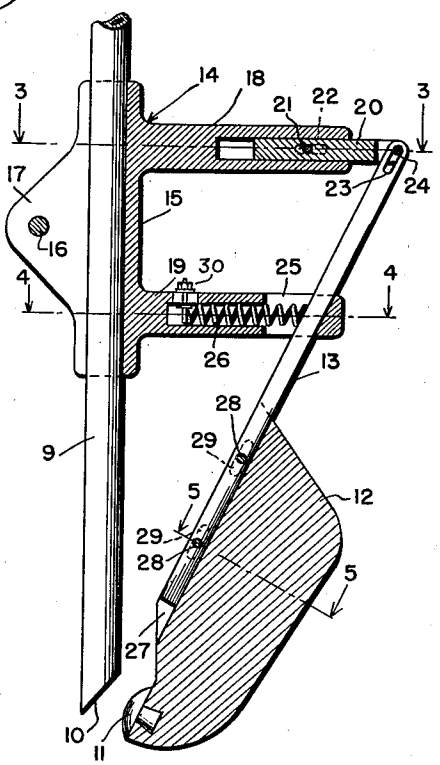


FIG. 3.

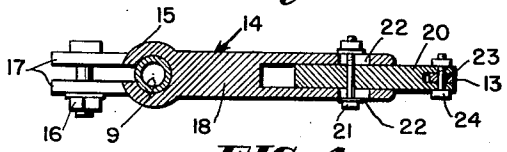


FIG. 4.

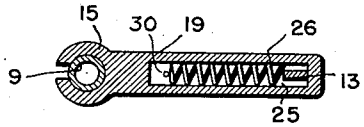
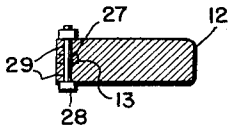


FIG. 5.



Inventor

John Kailenta

By Bernard J. Garvey

Attorney

Patented Nov. 7, 1950 2,529,341

UNITED STATES PATENT OFFICE

2,529,341

SPRAYER REGULATOR

John Kailenta, Staten Island, N. Y.

Application December 12, 1946, Serial No. 715,868

3 Claims. (Cl. 299—88)

1

This invention relates to improvements in sprayers. The invention is particularly concerned with sprayers of the type generally employed in applying wax to such surfaces as floors and the like.

It is well known, and I have found by actual experience, that household sprayers now generally employed for applying wax are difficult to use properly by the average home worker. For best results most types of wax should be sprayed on the surface being worked evenly and with a fine mist. The obtaining and maintaining of the desired fine mist depends upon the angle at which the sprayer is held. Such is a factor that is either ignored by, or is unknown to, the average person when applying wax to a given surface.

The adjustments provided on such sprayers as are now used for applying wax in mist form do not allow for the increased gravity flow of wax when the spraying angle is increased. Accordingly, the sprayers now generally known and used, require a high degree of skill and experience in the employment thereof with the result that the average user soon discards the sprayer and reverts to the old hand method of applying the wax.

It is therefore an object of the present invention to provide a srayer so equipped as to render the effective use thereof possible without requiring any degree of skill or practice on the part of the user and whereby the flow of liquid wax is substantially and automatically controlled as the angular position of the sprayer is shifted or varied to the end that the wax will be emitted from the sprayer only when the latter is held at that angle which will insure an emission of the wax in the form of a fine mist which experience has taught to be the proper mode of applying wax for best results and without waste of time, effort and material.

In accordance with the present invention, the sprayer is equipped with an efficient gravity valve controlled by a novel and efficient pilot lever and weight assembly for operating the valve as the angular position of the sprayer is shifted or varied. Also, in accordance with this invention, the pilot lever and weight assembly for the valve is of a character as to permit of a wide range of adjustments to insure maximum efficiency under substantially all conditions of use.

The invention together with its objects and advantages will be best understood from a reading of the following description in reference to the accompanying drawings in which is illustrated a preferred embodiment of the invention, and wherein:

Figure 1 is a fragmentary side elevational view of a sprayer, certain portions being broken away, illustrating the application of the invention;

Figure 2 is an enlarged view of a control valve

2

assembly constituting a salient feature of the invention, certain parts being shown in section and others in elevation, with the valve in open position; and

Figures 3, 4 and 5 are detail sectional views taken substantially on the lines 3—3, 4—4 and 5—5, respectively, of Figure 2.

For purposes of illustration I have shown my invention as applied to that type of wax-sprayer embodying a receptacle 5 for the wax to be applied to the desired surface by spraying, a removable top 6 for the receptacle, and a conventional dispensing mechanism mounted on and carried by the top and comprising, generally, a cylindrical body 7 equipped at one end with a discharge or blast nozzle 8, through which the wax may be dispensed in the form of a fine mist. The dispensing mechanism may be either of the self-contained hand pump type of known assembly or of the type adapted to have connected therewith a remote source of air supply, as for example, an air-compressor. In either event the dispensing mechanism also includes a suction or feed tube 9 that extends from the cylinder 7 through the cap 6 and into the receptacle 5. This tube 9 feeds the contents of the receptacle 5 to the dispensing mechanism to be discharged in the form of a spray as it comes out of the nozzle 8, and has its inner end open and located at a point near the bottom of the receptacle 5 as shown.

In accordance with the present invention the sprayer is characterized by having the inner inlet end of the tube 9 formed and placed at an acute angle with the axis of the tube as at 10, and controlled by a valve 11, as the angle of the sprayer is varied or shifted.

The valve 11 is preferably formed of rubber and is of a shape as to complement the shape of the tube 9 at its inlet 10 to the end that effective seating of the valve is assured. This valve is carried on a weight 12 and is controlled by the weight and a rocker or pilot-lever 13.

For supporting the pilot-lever and weight assembly referred to in the preceding paragraph, there is provided a bracket 14. This bracket comprises a split tubular clamp 15 that embraces the tube 9 and is secured thereon at the desired position of vertical adjustment by contracting the clamp about the tube through the simple process of tightening up on the bolt and nut assembly 16 associated in the usual manner with opposed ears 17 formed on the clamp portion 15 of the bracket. Other components of the bracket are lateral arms 18, 19, that extend from the clamp 15, one directly above the other.

Bracket arm 18 is provided with an extension member 20 that has a working fit within the bore of the arm, and is secured at the desired position of adjustment lengthwise of the arm through the

medium of a bolt and nut assembly 21, the bolt of which extends transversely through the extension 20 and works in slots 22 provided in the arm at diametrically opposite sides of the latter. The outer or free end of the arm extension is apertured and bifurcated to accommodate the slotted free end 23 of pilot-lever 13 and a bolt and nut assembly 24 in a manner to provide an efficient pivot connection between the arm extension and the pilot-lever, as shown.

Bracket arm 19 is hollow and adjacent its free end is formed with a through slot 25 through which the pilot-lever 13 extends. Housed within the hollow of the arm 19 is a spring 26 that impinges against the pilot-lever and yieldingly acts thereon in opposition to the weight 12 to prevent a too-forceful seating of the valve 11 against the inlet end 10 of the tube 9 and as might result in damage to either. The spring also co-acts with the weight to normally retain the valve in an unseated position, the outer end of bracket arm 19 acting as a stop to limit movement of the pilot-lever in a direction effecting an unseating of the valve. Suitable provision 30 is made for varying the compression of the spring (see Figures 1, 2 and 4).

In addition to adjusting the pivot point 24 of lever 13 laterally with respect to the tube 9, control of the valve 11 is also effected by adjusting the position of the weight 12 on the lever. This adjustment may be readily accomplished, the weight 12 having in one face thereof a groove 27 in which is received the free end of lever 13. Bolt and nut assemblies 28 serve to secure the weight at the desired position of adjustment on the lever, the latter being provided with apertures and the weight being provided with pairs of opposed slots 29 to accommodate the bolts of the assemblies 28.

From the foregoing it will be apparent that as the angle of the sprayer is shifted while in use spring 26 and weight 12 act in opposition and in response to gravity to reduce or completely stop the flow of the contents of the receptacle 5 through the tube 9 by controlling the movement of the valve 11 toward or away from its seat 10, the action of the weight overcoming the action of the spring as the angle increases, to the end that should the angle be increased beyond a predetermined degree valve 11 will move to fully seated position. Thus it will be seen that in accordance with my invention the flow of the wax to the dispensing mechanism is reduced or completely stopped when the user of the sprayer increases the angle thereof to a degree where it will have a harmful effect on the result of the application of the wax. Hence the sprayer embodying the features of my invention is substantially foolproof, a wide range of adjustment being provided for to insure against any increase in the flow of the wax to the dispensing mechanism as the angle at which the sprayer is held is increased beyond that which is determined to be best suited for desirable results.

While I have herein described a preferred embodiment of my invention, nevertheless it is to be understood that various changes may be made in the invention, within the scope of the appended claims.

What is claimed is:

1. A sprayer comprising a receptacle portion, a dispensing mechanism including a nozzle and a feed tube, the latter extending into the receptacle and having an inlet end near the bottom of the receptacle, a bracket adjustably mounted on the tube within the receptacle, a rocker-lever supported by the bracket, a weight adjustably mounted on the lever, a valve for the inlet end of the tube carried by the weight, and a biasing spring mounted on the bracket and impinging on the lever.

2. A sprayer of the type embodying a dispensing mechanism including a feed tube having an inlet end formed to an acute angle with its axis, a bracket adjustably mounted on the tube, a pilot-lever, an adjustable pivotal connection between the lever and the bracket, a biasing spring mounted on the bracket and impinging against the lever, a weight, adjustably mounted on the lever, and a valve carried by the weight and adapted to seat against the inlet end of the tube.

3. In a sprayer of the type embodying a dispensing mechanism including a feed tube, a control valve assembly for the inlet of the tube comprising a bracket mounted on the tube, a rocker having an adjustable pivotal connection with the bracket, a guide arm for the rocker extending from the bracket, a spring mounted on the guide arm and impinging against the rocker, and a valve-equipped weight adjustably mounted on the rocker.

JOHN KAILENTA.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
77,507	McGuffin	May 5, 1868
773,347	Smith	Oct. 25, 1904
1,397,023	Tunnell	Nov. 15, 1921
2,011,243	Griswold	Aug. 13, 1935
2,222,594	Metcalf	Nov. 26, 1940

FOREIGN PATENTS

Number	Country	Date
372,999	Great Britain	May 19, 1932
667,582	France	June 17, 1929